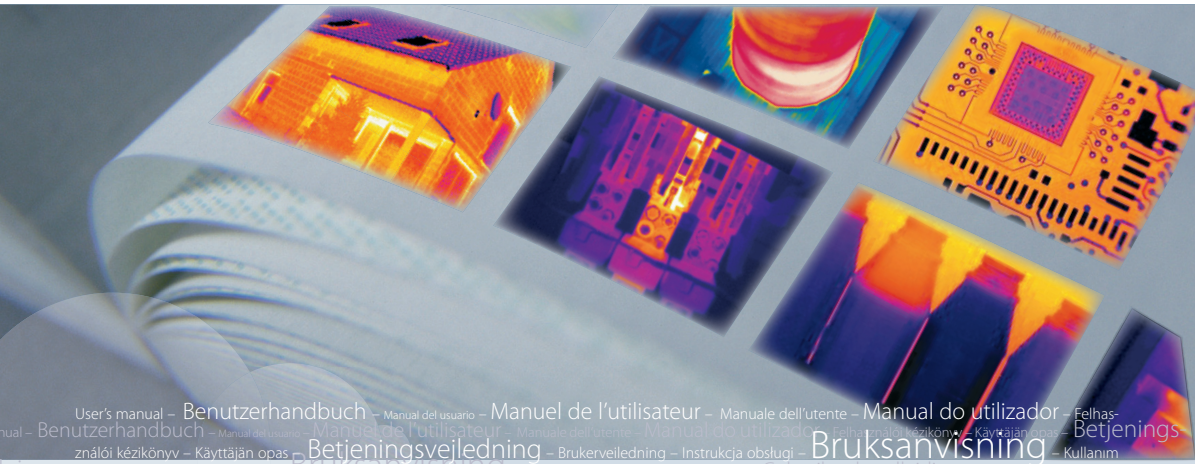
User's manual



ThermaCAM™ QuickReport

Program version 1.1

Publ. No.	1558629
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Notice to user 1

Quick Start Guide 2

Workflow 3

Installation 4

Supported file formats 5

Window elements & toolbar buttons 6

Connecting the camera 7

Handling files 8

Viewing images 9

Analyzing images 10

Adding & editing image descriptions 11

Editing text comments 12

Creating a report 13

Troubleshooting 14

About FLIR Systems 15

ThermaCAM™ QuickReport

User's manual

Publ. No. 1558629 Rev. a232 – ENGLISH (EN) – July 6, 2007

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Table of contents

1 Notice to user 1

2 Quick Start Guide 3

3 Workflow 4

4 Installation 7
- 4.1 System requirements 7
- 4.2 Installation of ThermaCAM™ QuickReport 9
  - 4.2.1 Windows® XP installation 9
  - 4.2.2 Windows® Vista installation 10
- 4.3 Installation of USB drivers 11
- 4.4 Updating the program 12

5 Supported file formats 13

6 Window elements & toolbar buttons 15
- 6.1 Window elements: The Organize tab 15
- 6.2 Window elements: The Analyze tab 16
- 6.3 Window elements: The Report tab 17
- 6.4 Toolbar buttons (on the Analyze tab) 18

7 Connecting the camera 21

8 Handling files 23
- 8.1 Moving images 23
  - 8.1.1 Moving images from your camera to your computer 23
  - 8.1.2 Moving images on your computer 25
- 8.2 Copying images 26
- 8.3 Saving images to a different destination folder 27
- 8.4 Cutting & pasting images 28
- 8.5 Deleting images 29
- 8.6 Renaming images 30
- 8.7 Printing images 31
- 8.8 Sending images by e-mail (Microsoft® Outlook only) 32
- 8.9 Sending images to ThermaCAM™ Reporter 33

9 Viewing images 35
- 9.1 Changing view settings 35
- 9.2 Changing zoom factor 36
- 9.3 Rotating images 37
- 9.4 Changing palette 38

10 Analyzing images 39
- 10.1 Using the flying spot meter tool 40
- 10.2 Creating a spot meter 41
- 10.3 Creating a line 42
- 10.4 Creating an area 43
- 10.5 Isotherms & building alarms 44
  - 10.5.1 Creating an isotherm 44
  - 10.5.2 About building alarms 45

10.6 Changing isotherm levels 46
10.7 Moving a spot meter, area, or a line 47
10.8 Deleting a spot meter, area, or a line 48
10.9 Deleting an isotherm or a building alarm 49
10.10 Changing temperature levels 50
10.11 Changing object parameters 51
10.12 Auto-adjusting an image 52

11 Adding & editing image descriptions 53

12 Editing text comments 55

13 Creating a report 56

14 Troubleshooting 59
14.1 Ensuring that the camera has the correct software version 60
14.2 Restarting the camera 61
14.3 Troubleshooting connection problems 62
14.4 Giving a user Local Administrator Rights 63
14.5 Giving a user rights to install and uninstall device drivers 64
14.6 Troubleshooting password-protected screensaver problems 65

15 About FLIR Systems 67
15.1 More than just an infrared camera 68
15.2 Sharing our knowledge 68
15.3 Supporting our customers 68
15.4 A few images from our facilities 69

Index 71

1 Notice to user

Typographical conventions

This manual uses the following typographical conventions:

- **Semibold** is used for menu names, menu commands and labels, and buttons in dialog boxes.
- *Italic* is used for important information.
- `Monospace` is used for code samples.
- UPPER CASE is used for names on keys and buttons.

Comments and questions

Make a report of errors that you find, as well as your suggestions for new revisions. Send an e-mail to:

documentation@flir.se

Technical support

For technical support, visit:

http://flir.custhelp.com

To submit a question to the technical support team, you must be a registered user. It only takes a few minutes to register online. If you only want to search the knowledgebase for existing questions and answers, you do not need to be a registered user.

When you want to submit a question, make sure that you have the following information to hand:

- The camera model
- The camera serial number
- The communication protocol, or method, between the camera and your PC (for example, Ethernet, USB, or FireWire)
- Operating system on your PC
- Microsoft® Office version
- Full name, publication number, and revision number of the manual

User-to-user forums

Exchange ideas, problems, and infrared solutions with fellow thermographers around the world in our user-to-user forums. To go to the forums, visit:

http://www.infraredtraining.com/community/boards/

Software updates

FLIR Systems regularly issues software upgrades and service releases on the support pages of the company website:

http://www.flirthermography.com

To find the latest upgrades and service releases, make that sure you select **USA** in the **Select country** box in the top right corner of the page.

Training

To read about infrared training, visit:

http://www.infraredtraining.com

Additional license information

This software is sold under a single user license. This license permits the user to install and use the software on any compatible computer provided the software is used on only one computer at a time. One (1) back-up copy of the software may also be made for archive purposes.

2 Quick Start Guide

Procedure

Follow this procedure to get started right away:

1	Install ThermaCAM™ QuickReport on your computer. For more information, see section 4 – Installation on page 7.
2	Connect your camera to the computer, using a USB cable. For more information, see section 7 – Connecting the camera on page 21.
3	Start ThermaCAM™ QuickReport.
4	On the **Organize** tab, click **Transfer images** and follow the on-screen instructions to move the images from the camera to a destination folder on your computer. For more information, see section 8 – Handling files on page 23.
5	In the folder pane, go to the destination folder.
6	On the **Analyze** tab, add measurement tools, create or edit image descriptions, edit text comments, listen to voice comments, change object parameters, etc. For more information, see section 10 – Analyzing images on page 39.
7	On the **Report** tab, select a report template and move the images that you want to include in the report to the report pane by using a drag-and-drop operation. For more information, see section 13 – Creating a report on page 56.
8	Create the report.

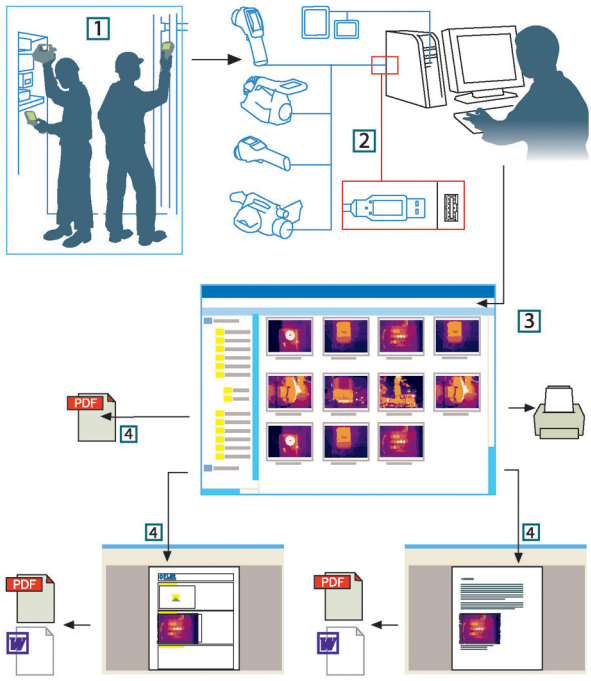
3 Workflow

General

When you carry out an infrared inspection you follow a typical workflow. This section gives an example of an infrared inspection workflow.

Figure

10548003;a8



Explanation

This table gives an explanation to the figure above:

1	Use your camera to take your infrared images and/or digital photos.
2	Do one of the following: ▪ **Method 1:** Move the images using a USB cable. ▪ **Method 2:** Move the images using a CompactFlash card. ▪ **Method 3:** Move the images using an SD Memory Card. For more information, see the following sections: ▪ Section 7 – Connecting the camera on page 21 ▪ Section 8.1 – Moving images on page 23

3	In ThermaCAM™ QuickReport, do one or more of the following: ■ Change how the images are viewed ■ Handle files ■ Analyze images ■ Add and edit image descriptions ■ Edit text comments For more information, see the following sections: ■ Section 9 – Viewing images on page 35 ■ Section 8 – Handling files on page 23 ■ Section 10 – Analyzing images on page 39 ■ Section 11 – Adding & editing image descriptions on page 53
4	Do one of the following to create an infrared report: ■ Using a drag-and-drop operation, organize your report on the **Report** tab, and then click **Create report**. ■ Using a drag-and-drop operation, move images from ThermaCAM™ QuickReport into Microsoft® Word, add your own comments and descriptions and use Microsoft® Word to create a report. ■ Using a drag-and-drop operation, move images from ThermaCAM™ QuickReport into ThermaCAM™ Reporter (an add-on to Microsoft® Word) and use ThermaCAM™ Reporter to create the report. ■ On the **File** menu, select **Create ThermaCAM report using this template** to send selected images to ThermaCAM™ Reporter. For more information, see section 13 – Creating a report on page 56.

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Publ. No. 1558629 Rev. a232 – ENGLISH (EN) – July 6, 2007

4 Installation

4.1 System requirements

Operating system

ThermaCAM™ QuickReport supports USB communication for the following PC operating systems:

- Microsoft® Windows® XP with Service Pack 2 (SP-2), or later
- Windows® Vista®

Hardware

Microsoft® Windows® XP:

- Personal computer with an Intel® 800 MHz Pentium processor, or an AMD Opteron, AMD Athlon 64, or AMD Athlon XP processor
- 512 MB of RAM, or greater
- 20 GB of available hard disk space
- CD-ROM or DVD-ROM drive
- Super VGA (1024 × 768) or higher-resolution monitor
- Internet access required for web updates
- Keyboard and Microsoft® mouse, or a compatible pointing device

Microsoft® Windows® Vista:

- Personal computer with a 1 GHz 32-bit (x86) processor
- 1 GB of RAM, or greater
- 40 GB hard disk, with at least 15 GB available hard disk space
- DVD-ROM drive
- Support for DirectX 9 graphics with:
  - WDDM Driver
  - 128 MB of graphics memory (minimum)
  - Pixel Shader 2.0 in hardware
  - 32 bits per pixel
- Super VGA (1024 × 768) or higher-resolution monitor
- Internet access (fees may apply)
- Audio output
- Keyboard and Microsoft® mouse, or a compatible pointing device

Camera system

If you intend to use ThermaCAM™ QuickReport with one of the following cameras, you must ensure that your camera software version is supported:

- B series cameras (except BCAM and B640)
- E series cameras
- P series cameras (except P640)
- S series cameras

For more information about supported camera software versions, see section 14.1 – Ensuring that the camera has the correct software version on page 60.

Compatibility with software from FLIR Systems

Sending infrared images and digital photos to ThermaCAM™ Reporter requires one of the following software versions:

- ThermaCAM™ Reporter 8, or later
- ThermaCAM™ Reporter 8 Professional, or later
- ThermaCAM™ Reporter 7 Basic, with Service Release 4 (SR-4)
- ThermaCAM™ Reporter 7 Professional, with Service Release 4 (SR-4)

NOTE

- Microsoft® Windows® XP 64-bit is not supported.
- Microsoft® Windows® Vista 64-bit is not supported.
- Actual requirements and product functionality may vary based on your system configuration.

4.2 Installation of ThermaCAM™ QuickReport

4.2.1 Windows® XP installation

NOTE

Before you install ThermaCAM™ QuickReport, do the following:

1 Close all programs.
2 Uninstall any previous versions of ThermaCAM™ QuickReport and ThermaCAM™ QuickView.
3 Uninstall any drivers and language packs related to these programs.

Procedure

Follow this procedure to install ThermaCAM™ QuickReport:

1	Insert the ThermaCAM™ QuickReport installation CD into the CD-ROM drive. The installation should start automatically. If the installation does not start automatically, follow this procedure: **1** Double-click **My Computer** on **Desktop**. **2** Right-click the CD-ROM drive and click **Explore**. **3** Double-click SETUP.EXE. **4** Go to Step 2 below.
2	ThermaCAM™ QuickReport requires some prerequisites. If they are not already installed on your computer, click **OK** when asked if you want to install the software.
3	ThermaCAM™ QuickReport requires Microsoft® .NET Framework 2.0. If this software is not already installed on your computer, click **OK** when asked if you want to install the software. Installation of Microsoft® .NET Framework 2.0 can take several minutes.
4	In the ThermaCAM™ QuickReport installation wizard dialog box, click **Next**.
5	In the license agreement dialog box, carefully read and accept the license agreement and click **Next**.
6	In the customer information dialog box, enter your customer details and click **Next**.
7	Click **Install**.
8	Click **Finish**.
9	If you are asked to restart your computer, do so.

4.2.2 Windows® Vista installation

General

Before you install ThermaCAM™ QuickReport, close all programs.

Procedure

Follow this procedure to install ThermaCAM™ QuickReport:

1	Insert the ThermaCAM™ QuickReport installation CD into the CD-ROM drive. The installation should start automatically.
2	In the **Autoplay** dialog box, click **Run setup.exe (Published by FLIR Systems)**.
3	In the **User Account Control** dialog box, confirm that you want to install ThermaCAM™ QuickReport.
4	In the language dialog box, select the language that you want to use and install for ThermaCAM™ QuickReport.
5	In the **Welcome to the InstallShield Wizard for ThermaCAM™ QuickReport** dialog box, click **Next**.
6	In the **License Agreement** dialog box, carefully read and accept the license agreement and click **Next**.
7	In the **Customer Information** dialog box, enter your customer details and click **Next**.
8	In the **Ready to Install the Program** dialog box, click **Install**.
9	Click **Finish**. The installation is now completed. If you are asked to restart your computer, do so.

4.3 Installation of USB drivers

NOTE

If your camera and PC operating system combination is one of the following, you may need to install additional drivers:

- Windows® XP and an E/P/S series camera
- Windows® Vista and an E/P/S series camera

Procedure

Follow this procedure to install additional drivers:

1	Start the camera.
2	Connect the camera to the PC.
3	When the computer has detected the camera, follow the on-screen instructions to install USB drivers.

4.4 Updating the program

General

You can update the program in two different ways:

- Download and install program updates (new point releases, bug fixes, patches, etc.).
- Download and install new or revised language packs (user's manuals, help files, etc.).

Procedure

Follow this procedure to update your program:

1	On Windows® **Start** menu, click **Programs**.
2	In the list of programs, go to FLIR Systems and follow this procedure (in this order): **1** On the ThermaCAM™ QuickReport submenu, click **Check for updates**. **2** On the ThermaCAM™ QuickReport submenu, click **Check for languages**.
3	Follow the on-screen instructions to download and install the program updates and/or language packs.

5 Supported file formats

General

ThermaCAM™ QuickReport supports several radiometric and non-radiometric file formats.

Radiometric file formats

ThermaCAM™ QuickReport supports the following radiometric file formats:

- ThermaCAM™ radiometric *.jpg
- ThermaCAM™ radiometric *.img

Non-radiometric file formats

ThermaCAM™ QuickReport supports the following non-radiometric file formats:

- *.jpg
- *.bmp

NOTE

Radiometric *.jpg images that are merged from an infrared image and a digital photo will be correctly displayed in ThermaCAM™ QuickReport. However, the degree of merging can not be changed in this program. Furthermore, temperature analysis can not be carried out on such images.

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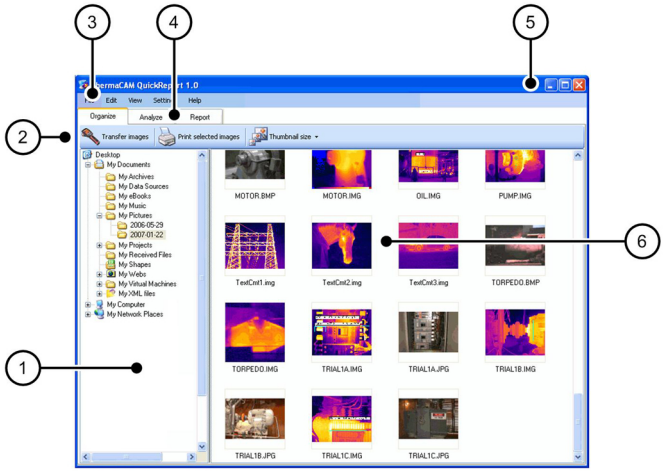
6 Window elements & toolbar buttons

6.1 *Window elements: The **Organize** tab*

Figure

10756003;a1



Explanation

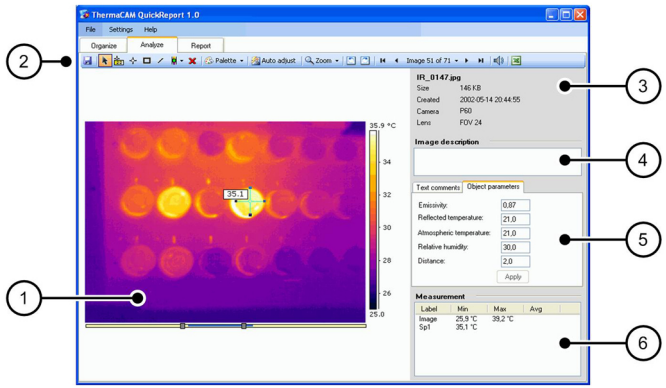
This table gives an explanation to the figure above:

1	Folder pane
2	Buttons (from left to right): ▪ **Transfer images** ▪ **Print selected images** ▪ **Thumbnail size**
3	Menu bar
4	Tabs (from left to right): ▪ **Organize** ▪ **Analyze** ▪ **Report**
5	Minimize, Maximize, and Close buttons
6	Image pane

6.2 Window elements: The **Analyze** tab

Figure

10756103;a2



Explanation

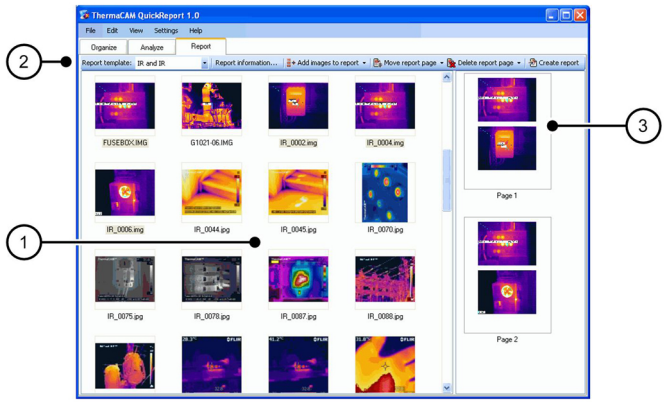
This table gives an explanation to the figure above:

1	Infrared image with measurement tools
2	Image toolbar For more information, see section 6.4 – Toolbar buttons (on the Analyze tab) on page 18.
3	Image information from the camera
4	**Image description** text box. You can edit an existing image description in this text box, or enter a new image description.
5	**Text comments** tab and **Object parameters** tab. You can edit both text comments and object parameters.
6	Measurement result table

6.3 Window elements: The **Report** tab

Figure

10756203;a1



Explanation

This table gives an explanation to the figure above:

1	Image pane
2	You use these button to configure your inspection report (left to right): ▪ **Report template**: To select which report template you want to use ▪ **Report information**: To change logotype, enter thermographer and customer contact information, etc. ▪ **Add images to report**: To add all or selected images to the report ▪ **Move report page**: To move a selected report page to another position in the report ▪ **Delete report page**: To delete a selected report page from the report ▪ **Create report**: To create the report as a Adobe® PDF file
3	Report preview pane

6

6.4 Toolbar buttons (on the **Analyze** tab)

Toolbar buttons

	Save tool You use this tool to save changes that you have made within an image.
	Select tool You use this tool when you want to move spots, areas, lines, and isotherm levels within an image. You also use the tool to deselect menu commands on the image toolbar menus.
	Flying spot meter tool You use this tool to create a flying spot meter. When you move the flying spot meter over the image area, the temperature will be displayed at the location of the spot meter.
	Spot meter tool You use this tool to create a spot meter that you can put anywhere on the image. The spot meter and the temperature it displays will be stored within the image when you save it. To move the spot meter, use the Select tool.
	Area tool You use this tool to click-and-drag within the image to create an area. The minimum and maximum temperature in the area will be displayed in the measurement result table. To move the area, use the Select tool.
	Line tool You use this tool to create a line within the image. The minimum and maximum temperature along the line will be displayed in the measurement result table. To move the line, use the Select tool.
	Isotherm tool You use this tool to create isotherms, i.e., to assign specific colors to specific temperature ranges. You also use this tool to work with building alarms. To move the isotherm levels in the temperature scale, use the Select tool.
	Delete tool You use this tool to delete one or several selected measurement tools.
	Palette tool You use this tool to change the color palette within an image.

	Auto-adjust tool You use this tool to auto-adjust an image for best brightness and contrast.
	Zoom tool You use this tool to change the zoom factor within an image.
	Rotate counter-clockwise tool You use this tool to rotate an image counter-clockwise in 90° increments.
	Rotate clockwise tool You use this tool to rotate an image clockwise in 90° increments.
	Image navigation tool, #1 You use this tool to go to the first image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #2 You use this tool to go to the previous image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #3 You use this tool to go to the next image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #4 You use this tool to go to the last image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Voice comment tool. You use this tool to listen to voice comments associated with an image.
	Export to Microsoft® Excel tool You use this tool to export pixel temperature values to Microsoft® Excel. You can then perform a variety of calculations on the pixel values.

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7 Connecting the camera

General

If your camera does not have a CompactFlash card or SD Memory Card, you must connect the camera to a computer to move the images to the computer.

Procedure

Follow this procedure to connect the camera to a computer:

1	Do one of the following: ▪ If your camera is an InfraCAM/InfraCAM SD, a BCAM/BCAM SD, or a B640/P640/SC640 camera, select **Standard** in the camera program (**USB cable → Standard**). ▪ If you have another camera, go to the second bullet in Step 2 below.
2	Connect a USB cable to the USB connector on the connector panel of the camera.
3	Connect the other end of the USB cable to its connector on the rear connector panel of a desktop or laptop computer.
4	When you have connected the camera the computer, go to section 8.1 – Moving images on page 23 for further instructions.

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Publ. No. 1558629 Rev. a232 – ENGLISH (EN) – July 6, 2007

8 Handling files

8.1 Moving images

8.1.1 Moving images from your camera to your computer

General

Depending on camera model, you can use three different methods to move images from your camera to your computer:

- **Method 1:** Move the images using a USB cable.
- **Method 2:** Move the images using a CompactFlash card.
- **Method 3:** Move the images using an SD Memory Card.

Method 1

Follow this procedure to move images from your camera to your computer using a USB cable:

1	To start ThermaCAM™ QuickReport and display the **Transfer images** dialog box, connect your camera to the computer (see section 7 – Connecting the camera on page 21). If the **Transfer images** dialog box does not appear automatically, start ThermaCAM™ QuickReport and click **Transfer images** on the **Organize** tab. This will display the dialog box.
2	In the **Transfer images** dialog box, click one of these buttons: ▪ **Copy all images from the camera** ▪ **Move all images from the camera**
3	To select a different destination folder, click **Browse**.
4	To move the images, click **OK**.

NOTE

Depending on the camera model, the images may be saved in a subfolder instead of the specified folder itself, e.g., in C:\2007-01-23\images\dirA\ instead of C:\2007-01-23\.

Method 2

Follow this procedure to move images from your camera to your computer using a CompactFlash card:

1	Remove the CompactFlash card from your camera and insert it into a CompactFlash card reader that is connected to your computer.
2	In the folder pane of ThermaCAM™ QuickReport, go to the disk drive for the CompactFlash card reader.
3	Do one of the following: ▪ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ▪ Move the images to the destination folder using a drag-and-drop operation.

Method 3

Follow this procedure to move images from your camera to your computer using a SD Memory Card:

1	Remove the SD Memory Card from your camera and insert it into a SD Memory Card reader that is connected to your computer.
2	In the folder pane of ThermaCAM™ QuickReport, go to the disk drive for the SD Memory Card reader.
3	Do one of the following: ▪ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ▪ Move the images to the destination folder using a drag-and-drop operation.

8.1.2 Moving images on your computer

General

You can move one image or a group of images from the image pane to a destination folder, or to a different program on your computer.

Procedure

Follow this procedure to move one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ■ Move the image/images to the destination folder using a drag-and-drop operation.

8.2 Copying images

General

You can copy one image or a group of images from the image pane to a destination folder, or to a different program on your computer.

Procedure

Follow this procedure to copy one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ On the **Edit** menu, click **Copy To Folder** to copy the image/images to a destination folder of your choice. ■ Right-click the image/images and click **Copy**. ■ Press CTRL + C.
4	Do one of the following: ■ Select a destination folder or a different program and press CTRL + V. ■ Select a destination folder or a different program and click **Paste** on the **Edit** menu.

8.3 Saving images to a different destination folder

General

You can save an image to a different destination folder on your PC.

Procedure

Follow this procedure to save an image to a different destination folder:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image you want to save to a different destination folder. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image you want to save to a different destination folder.
2	When you are on the **Analyze** tab, click **Save As** on the **File** menu and select a destination folder of your choice.
3	Save the image to this destination folder.

NOTE

When you go back to the program after you have saved the image, it is the old image that is displayed—not the image you just saved.

To find the image you just saved, go to the **Organize** tab and navigate to the folder using the folder pane.

8.4 Cutting & pasting images

General

You can cut & paste one image or a group of images to a destination folder, or to a different program.

Procedure

Follow this procedure to cut & paste one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Right-click the image/images and click **Cut**. ■ Press CTRL + X.
4	In the destination folder, or the target application, do one of the following: ■ Right-click and click **Paste**. ■ Press CTRL + V.

8.5 Deleting images

General

You can delete one image or a group of images.

Procedure

Follow this procedure to delete one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Press DELETE. ■ On the **File** menu, click **Delete**.

NOTE

When you delete an image or a group of images, you can still restore them from the computer's Recycle Bin.

8.6 Renaming images

General

You can rename an image.

Procedure

Follow this procedure to rename an image:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	To select an image, click the image one time.
3	Right-click the image and click **Rename**.
4	Type the new name for the image and press ENTER.

8.7 Printing images

General

You can print one image or a group of images on a local or network printer.

Procedure

Follow this procedure to print one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Analyze** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.

3	Do one of the following:
	■ If you are on the **Organize** tab, do one of the following:
	  ■ Right-click the image/images and click **Print**.
	  ■ Click **Print selected images**.
	  ■ On the **File** menu, select **Print**.
	■ If you are on the **Analyze** tab, select **Print** on the **File** menu.
	■ If you are on the **Report** tab, do one of the following:
	  ■ Right-click the image/images and click **Print**.
	  ■ On the **File** menu, select **Print**.

4	In the **Print** dialog box, make the necessary changes and click **OK**.

8.8 Sending images by e-mail (Microsoft® Outlook only)

General

You can send one image or a group of images by e-mail.

Procedure

Follow this procedure to send one image or a group of images by e-mail:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Right-click the image/images and click **Send To** → **Mail Recipient**. ■ On the **File** menu, click **Send To Mail Recipient**.

8.9 Sending images to ThermaCAM™ Reporter

General

You can send an image or a group of images to ThermaCAM™ Reporter. ThermaCAM™ Reporter is an advanced reporting program for infrared and visual images.

Procedure

Follow this procedure to send one image or a group of images to ThermaCAM™ Reporter:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	On the **File** menu, select **Create ThermaCAM report using this template** to send selected images to ThermaCAM™ Reporter.

NOTE

Sending infrared images and digital photos to ThermaCAM™ Reporter requires one of the following software versions:

- ThermaCAM™ Reporter 8, or later
- ThermaCAM™ Reporter 8 Professional, or later
- ThermaCAM™ Reporter 7 Basic, with Service Release 4 (SR-4)
- ThermaCAM™ Reporter 7 Professional, with Service Release 4 (SR-4)

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9 Viewing images

9.1 Changing view settings

General

On the **Organize** tab and the **Report** tab you can change the size of image thumbnails.

Procedure

Follow this procedure to change the size of image thumbnails:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Move the **Thumbnail size** slider to the left (smaller thumbnails) or to the right (larger thumbnails).

9.2 Changing zoom factor

General

You can change zoom factor for an image.

Procedure

Follow this procedure to change zoom factor for an image:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image for which you want to change zoom factor. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image for which you want to change zoom factor.
2	On the image toolbar on the **Analyze** tab, click the zoom factor on the **Zoom** menu.

NOTE

To reset the zoom factor to 1×, press the space bar on your keyboard.

9.3 Rotating images

General

You can rotate an image counter-clockwise or clockwise in 90° increments.

Procedure

Follow this procedure to rotate an image:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image you want to rotate. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image you want to rotate.
2	On the **Analyze** tab, do one of the following: ▪ To rotate the image counter-clockwise, click the toolbar button. ▪ To rotate the image clock-wise, click the toolbar button.

9.4 Changing palette

General

You can change the palette that the camera uses to display the different temperatures within the image. A different palette can make it easier to make an analysis of the image.

Procedure

Follow this procedure to change the palette:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image for which you want to change the palette. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image for which you want to change the palette.
2	On the **Analyze** tab, click the toolbar button to select a new palette.

NOTE

- In some camera models, **Palette** is called **Color**.
- Radiometric *.jpg images that are merged from an infrared image and a digital photo will be correctly displayed in ThermaCAM™ QuickReport. However, the degree of merging can not be changed in this program. Furthermore, temperature analysis can not be carried out on such images.

10 Analyzing images

General

Do one or more of the following steps to analyze your images:

- Use the flying spot meter tool.
- Create a spot meter.
- Create a line.
- Create a measurement area.
- Create an isotherm.
- Move a spot or an area.
- Delete a spot or an area.
- Delete an isotherm.
- Change isotherm levels.
- Change temperature levels.
- Change object parameters.
- Auto-adjust the image.

SEE ALSO

For more information, see these sections:

- Section 10.1 – Using the flying spot meter tool on page 40
- Section 10.2 – Creating a spot meter on page 41
- Section 10.3 – Creating a line on page 42
- Section 10.4 – Creating an area on page 43
- Section 10.5 – Isotherms & building alarms on page 44
- Section 10.7 – Moving a spot meter, area, or a line on page 47
- Section 10.8 – Deleting a spot meter, area, or a line on page 48
- Section 10.9 – Deleting an isotherm or a building alarm on page 49
- Section 10.6 – Changing isotherm levels on page 46
- Section 10.10 – Changing temperature levels on page 50
- Section 10.11 – Changing object parameters on page 51
- Section 10.12 – Auto-adjusting an image on page 52

10.1 Using the flying spot meter tool

Procedure

Follow this procedure to use the flying spot meter tool to see the temperature:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To display the temperature, move the flying spot meter tool to any position on the image. The temperature will be displayed at the position of the flying spot meter tool.

10.2 Creating a spot meter

Procedure

Follow this procedure to create a spot meter:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create a spot meter, click in the image at the position where you want the spot meter to appear. The temperature will be displayed in the result table.

10.3 Creating a line

Procedure

Follow this procedure to create a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create a line, click-and-drag within the image. The temperature along the line will be displayed in the result table.

10.4 Creating an area

Procedure

Follow this procedure to an create an area:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create an area, click-and-drag within the image. The minimum and maximum temperature will be displayed in the result table.

10.5 Isotherms & building alarms

10.5.1 Creating an isotherm

General

You use the isotherm tool to assign a color to specific temperature ranges, and to work with alarms.

Procedure

Follow this procedure to create an isotherm:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, select one of the following isotherm types on the **Isotherm and alarm tools** menu: ■ **Above** ■ **Below** ■ **Interval**

NOTE

In some camera models, **Isotherm** is called **Color alarm**.

10.5.2 About building alarms

General

If your camera supports **Dewpoint alarm** and **Insulation alarm**, you can work with these alarms in ThermaCAM™ QuickReport.

About the Dewpoint alarm

Dewpoint can be regarded as the temperature at which the humidity in a certain volume of air will condense as liquid water. At this point, the relative humidity is 100%.

When you have set a number of environmental parameters, the **Dewpoint** alarm can detect these areas and warn you that there may be a deficiency in the building structure.

About the Insulation alarm

The **Insulation** alarm can detect areas where there may be an insulation deficiency in the building. It will trigger when the insulation level falls below a preset value of the energy leakage through the wall.

Different building codes recommend different values, but typical values are 0.6–0.8 for new buildings. Refer to your national building code for recommendations.

About the Alarm Settings dialog box

On the **Insulation alarm** tab you can change one or more of the following alarm parameters:

- **Outdoor temperature**
- **Indoor temperature**
- **Insulation level**

On the **Dewpoint alarm** tab you can change one or more of the following alarm parameters:

- **Relative humidity**
- **Atmospheric temperature**

SEE

For more information about these alarm types and alarm parameters, see your camera manual.

10.6 Changing isotherm levels

Procedure

Follow this procedure to change isotherm levels:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, select one of the following isotherm types on the **Isotherm and alarm tools** menu: ▪ **Above** ▪ **Below** ▪ **Interval**
3	On the image toolbar on the **Analyze** tab, click the toolbar button.
4	To change isotherm levels, click-and-drag the bar in the temperature scale.

NOTE

In some camera models, **Isotherm** is called **Color alarm**.

10.7 Moving a spot meter, area, or a line

Procedure

Follow this procedure to move a spot meter, area, or a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	Click the spot meter or the area once and hold down the mouse key.
4	To move the spot meter or the area, move the mouse and then release the mouse button.

10.8 Deleting a spot meter, area, or a line

Procedure

Follow this procedure to delete a spot meter, area, or a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	Click the spot meter, the area or line once.
4	Do one of the following to delete the spot meter, the area or line: ▪ Press DELETE ▪ On the image toolbar, click the toolbar button.

10.9 Deleting an isotherm or a building alarm

Procedure

Follow this procedure to delete an isotherm or a building alarm:

1	On the **Organize** tab, double-click an image that has an isotherm.
2	On the image toolbar on the **Analyze** tab, click the selected isotherm type or building alarm on the **Isotherm and alarm tools** menu. This will delete the isotherm or building alarm.

10.10 Changing temperature levels

General

At the bottom of the infrared image you will see two sliders. By dragging these sliders to the left or to the right you can change the top and bottom levels in the temperature scale.

Changing the top level

Follow this procedure to change the top level in the temperature scale:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, drag the right slider right or left to change the top level in the temperature scale

Changing the bottom level

Follow this procedure to change the bottom level in the temperature scale:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, drag the left slider right or left to change the bottom level in the temperature scale.

Changing both the top & bottom levels at the same time

Follow this procedure to change both the top and the bottom levels in the temperature scale at the same time:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, SHIFT-drag the left or right slider right or left to change both the top and the bottom levels in the temperature scale at the same time.

10.11 Changing object parameters

General

You can change the object parameter values for an image. Object parameters have an effect on the infrared radiation that the camera measures.

Recommended values

If you are unsure about the values, the following values are recommended:

Atmospheric temperature	+20°C (+69°F)
Distance	1.0 m (3.3 ft.)
Emissivity	0.95
Reflected apparent temperature	+20°C (+69°F)
Relative humidity	50%

Procedure

Follow this procedure to change object parameters:

1	On the **Organize** tab, double-click an image.
2	On the **Analyze** tab, go to the **Object parameters** tab in the right pane.
3	Type a value in the text box for each object parameter that you want to change.
4	Click **Apply**.

10.12 Auto-adjusting an image

General

You can auto-adjust an image or a group of images. When you auto-adjust an image you adjust it for best image brightness and contrast.

Procedure

Follow this procedure to auto-adjust an image:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.

11 Adding & editing image descriptions

General

You can add image descriptions to radiometric and non-radiometric *.jpg images. The image description will be saved in the image file and can be retrieved by other programs from FLIR Systems, and by programs from other companies.

NOTE

- An image description cannot be more than 255 characters.
- Press ENTER to start a new line.
- An image from an infrared camera may already contain an image description.

Adding an image description

Follow this procedure to add an image description:

1	On the **Organize** tab, double-click an image.
2	On the **Analyze** tab, enter an image description in the **Image description** text box.
3	To save the image description, click the toolbar button on the toolbar.

Editing an image description

Follow this procedure to edit an image description:

1	On the **Organize** tab, double-click an image that has an image description.
2	On the **Analyze** tab, edit the image description in the **Image description** text box.
3	To save the change, click the toolbar button on the toolbar.

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12 Editing text comments

General

In some camera models from FLIR Systems you can annotate infrared images using text comments.

A text comment is stored in an image file and you can edit the text comment in ThermaCAM™ QuickReport. However, you cannot create new text comments in this program.

Editing a text comment

Follow this procedure to edit a text comment:

1	On the **Organize** tab, double-click an image that has a text comment.
2	On the **Analyze** tab, go to the **Text comments** tab and edit the text comment value.
3	To save the change, click the toolbar button on the toolbar.

NOTE

You cannot create new, or edit existing, text comment labels.

13 Creating a report

General

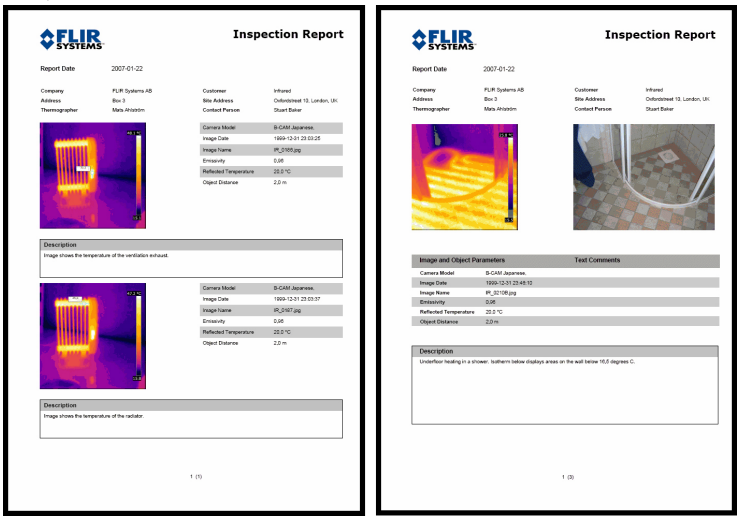
You can create inspection reports that include one or more infrared images and digital photos. The reports are saved in Adobe® PDF format. To download the free reader, go to:

http://www.adobe.com/products/reader/

Figure

This figure shows two inspection reports, generated from the **IR and IR** template (left), and the **IR and Photo** template (right):

10758203;a2



Procedure

Follow this procedure to create a report:

1	Go to the **Report** tab.
2	In the **Report template** box on the image toolbar, select the report template you want to use.
3	Move the images you want to include in your report to the report pane, using a drag-and-drop operation. A preview of the report pages will be displayed in the report preview pane.
4	On the toolbar, click **Create report**. The report will now be created. You can see a print preview of the report in a separate window. To save the report as an Adobe® PDF file, click the toolbar button in the separate window.

NOTE

Do not create reports with more than 150 pages, as this slows down the performance of the program.

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14 Troubleshooting

Troubleshooting overview

To troubleshoot communication between the camera and the PC, do one or more of the following:

- Make sure the PC has the latest drivers. If not, download them from *http://www.flirthermography.com*.
- Make sure the camera has the correct software version.
- Restart the camera to check if the problem reoccurs.
- Troubleshoot connection problems.
- Give a user Local Administrator Rights.
- Give a user rights to install and uninstall device drivers.
- Troubleshoot password-protected screensaver problems.

SEE ALSO

For more information, see these sections:

- Section 14.1 – Ensuring that the camera has the correct software version on page 60
- Section 14.2 – Restarting the camera on page 61
- Section 14.3 – Troubleshooting connection problems on page 62
- Section 14.4 – Giving a user Local Administrator Rights on page 63
- Section 14.5 – Giving a user rights to install and uninstall device drivers on page 64
- Section 14.6 – Troubleshooting password-protected screensaver problems on page 65

14.1 Ensuring that the camera has the correct software version

General

If you intend to use ThermaCAM™ QuickReport with a B, E, P or S series camera, you must ensure that the camera software version is supported.

Software version

ThermaCAM™ QuickReport supports these versions of camera software for B, E, P or S series cameras:

- B/E series cameras (except BCAM, BCAM SD, and B640): boot2 version 2.7.2.1, or higher
- B/E series cameras (except BCAM, BCAM SD, and B640): appl version 1.7.18.1, or higher
- P/S series cameras (except P640): boot2 version 2.4.2.1, or higher
- P/S series cameras (except P640): appl version 2.4.4.1, or higher

You can find the boot2/appl version in the **Camera info** dialog box.

14.2 Restarting the camera

Procedure

Follow this procedure to restart the camera:

1	Disconnect the camera from the PC.
2	Restart the camera.
3	Restart the PC.
4	Connect the camera to the PC.

14.3 Troubleshooting connection problems

Problem

If your camera model is InfraCAM/InfraCAM SD, BCAM/BCAM SD, or a B640, P640, or SC640 camera and you have selected **Network disk** in the camera program, a firewall problem can occur.

Procedure

Follow this procedure to resolve the problem:

1	On the **Control Panel**, click **Windows Firewall** (**Start** → **Settings** → **Control Panel** → **Windows Firewall**).
2	Go to the **Exceptions** tab and make sure that T3Mon and T3Srv are selected. If not, click **Add** and browse to C:\Program Files\FLIR Systems\Device drivers to add them to the list of exceptions. Once T3Mon and T3Srv are added to this list and selected it should allow communication with the camera.

NOTE

- On rare occasions, firewall problems can occur even when using other camera models. If this happens, follow the same procedure.
- If you do not use **Windows Firewall** but use another firewall, similar connection problems can occur. Refer to your software documentation to resolve the problem.

14.4 Giving a user Local Administrator Rights

Problem

On Windows® XP only Administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user Local Administrator Rights.

NOTE

You must log in as Administrator (or as a user with Administrator Rights).

Procedure

Follow this procedure to give a user Local Administrator Rights:

1	Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**).
2	Double-click **Administrative Tools**.
3	Double-click **Computer Management**.
4	Double-click **Local Users And Groups**.
5	Select **Groups** and double-click **Administrators**.
6	Add the relevant users, or the name of a group containing the right users.

14.5 Giving a user rights to install and uninstall device drivers

Problem

On Windows® XP only Administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user rights to install and uninstall device drivers.

NOTE

You must log in as Administrator (or as a user with Administrator Rights).

Procedure

Follow this procedure to give a user rights to install and uninstall device drivers:

1	Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**).
2	Double-click **Administrative Tools**.
3	Double-click **Local Security Policy**.
4	Double-click **Local Policies**.
5	Select **User Rights Assignment**.
6	Double-click **Load and Unload Device Drivers**.
7	Add the relevant users, or the name of a group containing the right users.

14.6 Troubleshooting password-protected screensaver problems

Problem	If you change user for a computer, or use a password-protected screensaver, the camera icon in the status area may disappear.
Procedure	Disconnect and reconnect the USB cable between your camera and your computer.

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15 About FLIR Systems

FLIR Systems was established in 1978 to pioneer the development of high-performance infrared imaging systems, and is the world leader in the design, manufacture, and marketing of thermal imaging systems for a wide variety of commercial, industrial, and government applications. Today, FLIR Systems embraces four major companies with outstanding achievements in infrared technology since 1965—the Swedish AGEMA Infrared Systems (formerly AGA Infrared Systems), and the three United States companies Indigo Systems, FSI, and Inframetrics.

10722703;a1

Figure 15.1 LEFT: Thermovision® Model 661 from 1969. The camera weighed approximately 25 kg (55 lb.), the oscilloscope 20 kg (44 lb.), and the tripod 15 kg (33 lb.). The operator also needed a 220 VAC generator set, and a 10 L (2.6 US gallon) jar with liquid nitrogen. To the left of the oscilloscope the Polaroid attachment (6 kg/13 lb.) can be seen. **RIGHT:** InfraCAM from 2006. Weight: 0.55 kg (1.21 lb.), including the battery

The company has sold more than 40,000 infrared cameras worldwide for applications such as predictive maintenance, R & D, non-destructive testing, process control and automation, and machine vision, among many others.

FLIR Systems has three manufacturing plants in the United States (Portland, OR, Boston, MA, Santa Barbara, CA) and one in Sweden (Stockholm). Direct sales offices in Belgium, Brazil, China, France, Germany, Great Britain, Hong Kong, Italy, Japan, Sweden, and the USA—together with a worldwide network of agents and distributors—support our international customer base.

FLIR Systems is at the forefront of innovation in the infrared camera industry. We anticipate market demand by constantly improving our existing cameras and developing new ones. The company has set milestones in product design and development such as the introduction of the first battery-operated portable camera for industrial inspections, and the first uncooled infrared camera, to mention just two innovations.

FLIR Systems manufactures all vital mechanical and electronic components of the camera systems itself. From detector design and manufacturing, to lenses and system electronics, to final testing and calibration, all production steps are carried out and supervised by our own engineers. The in-depth expertise of these infrared specialists ensures the accuracy and reliability of all vital components that are assembled into your infrared camera.

15.1 More than just an infrared camera

At FLIR Systems we recognize that our job is to go beyond just producing the best infrared camera systems. We are committed to enabling all users of our infrared camera systems to work more productively by providing them with the most powerful camera–software combination. Especially tailored software for predictive maintenance, R & D, and process monitoring is developed in-house. Most software is available in a wide variety of languages.

We support all our infrared cameras with a wide variety of accessories to adapt your equipment to the most demanding infrared applications.

15.2 Sharing our knowledge

Although our cameras are designed to be very user-friendly, there is a lot more to thermography than just knowing how to handle a camera. Therefore, FLIR Systems has founded the Infrared Training Center (ITC), a separate business unit, that provides certified training courses. Attending one of the ITC courses will give you a truly hands-on learning experience.

The staff of the ITC are also there to provide you with any application support you may need in putting infrared theory into practice.

15.3 Supporting our customers

FLIR Systems operates a worldwide service network to keep your camera running at all times. If you discover a problem with your camera, local service centers have all the equipment and expertise to solve it within the shortest possible time. Therefore, there is no need to send your camera to the other side of the world or to talk to someone who does not speak your language.

15.4 A few images from our facilities

10401303;a1

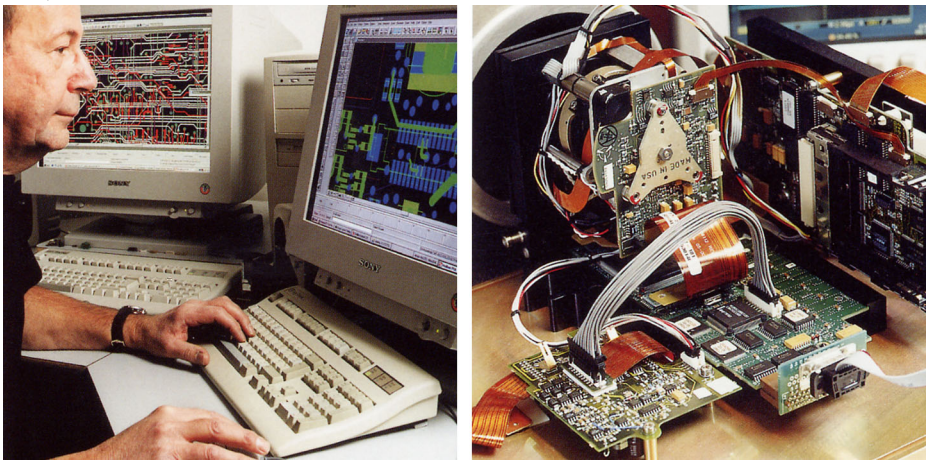

Figure 15.2 LEFT: Development of system electronics; **RIGHT:** Testing of an FPA detector

10401403;a1

Figure 15.3 LEFT: Diamond turning machine; **RIGHT:** Lens polishing

10401503;a1

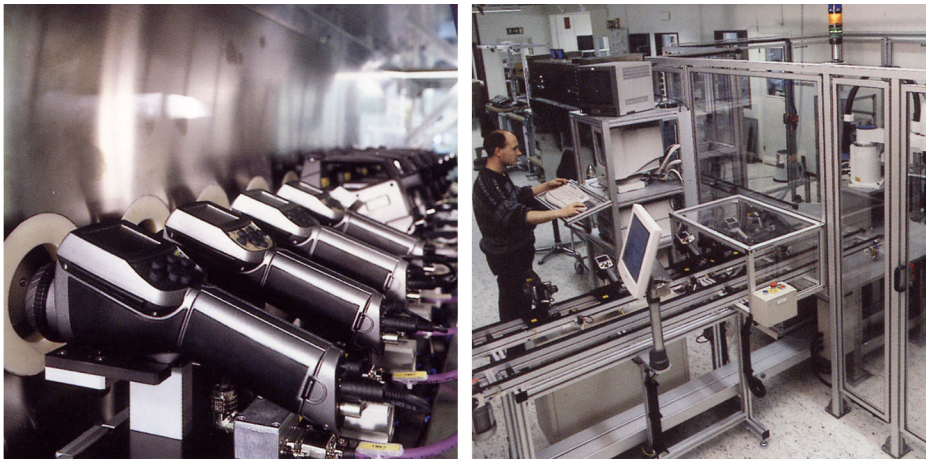

Figure 15.4 LEFT: Testing of infrared cameras in the climatic chamber; **RIGHT:** Robot used for camera testing and calibration

Index

*.bmp: 13
*.img: 13
*.jpg: 13

A
about FLIR Systems: 67
adding image descriptions: 53
address: viii
administrator rights: 63, 64
area
  creating: 43
  deleting: 48
  moving: 47
  tool: 18
atmospheric temperature, changing: 51
auto-adjust
  tool: 19
auto-adjusting images: 52

B
bmp: 13
building alarm
  deleting: 49
  Dewpoint alarm: 45
  Insulation alarm: 45
buttons
  image toolbar: 18

C
camera
  connecting: 21
  restarting: 61
camera drivers
  installing: 11
changing
  atmospheric temperature: 51
  distance: 51
  emissivity: 51
  isotherm levels: 46
  object parameters: 51
  palette: 38
  reflected apparent temperature: 51
  relative humidity: 51
  temperature levels: 50
  view settings: 35
  zoom factor: 36
comments: 1
compatibility
  ThermaCAM™ Reporter: 8
connecting
  camera: 21
  problems: 62
conventions
  typographical
    italic: 1
    `monospace`: 1
    semibold: 1
    UPPERCASE: 1
copying
  images: 26
copyright: viii
courses: 1
creating
  area: 43
  isotherm: 44
  line: 42
  report: 56
  spot meter: 41
customer support: 1
cutting images: 28

D
delete
  tool: 18
deleting
  area: 48
  building alarm: 49
  images: 29
  isotherm: 49
  line: 48
  spot meter: 48
Dewpoint alarm: 45
distance, changing: 51
drivers
  installing: 11

E
editing
  image descriptions: 53
  text comments: 55
education: 1
elemens, window: 15, 16, 17
emissivity, changing: 51
errors: 59
export to Microsoft® Excel
  tool: 19

F
file formats
*.bmp: 13
*.img: 13
*.jpg: 13
supported: 13
firewall problems: 62
FLIR Systems
copyright: viii
history: 67
ISO 9001: viii
legal disclaimer: viii
patents: viii
patents pending: viii
postal address: viii
product warranty: viii
quality assurance: viii
quality management system: viii
request for enhancement: 1
RFE: 1
trademarks: viii
warranty: viii
flying spot meter
tool: 18
using: 40
formats
*.bmp: 13
*.img: 13
*.jpg: 13
forums: 1

G
guide, quick start: 3

H
hardware requirements
camera: 7
PC: 7
history
FLIR Systems: 67

I
image
auto-adjusting: 52
image descriptions
adding: 53
editing: 53
image navigation
tool: 19
images
copying: 26
cutting: 28
images *(continued)*
deleting: 29
moving: 23, 25
pasting: 28
printing: 31
renaming: 30
rotating: 37
saving: 27
sending by e-mail: 32
sending to ThermaCAM™ Reporter: 33
image toolbar buttons: 18
area: 18
auto-adjust: 19
delete: 18
export to Microsoft® Excel: 19
flying spotmeter: 18
image navigation: 19
isotherm: 18
line: 18
palette: 18
rotate: 19
save: 18
select: 18
spot meter: 18
voice comment: 19
zoom: 19
img: 13
infrared inspection workflow: 4
inspection
report, creating: 56
workflow: 4
installing
program: 9, 10
USB drivers: 11
Insulation alarm: 45
ISO 9001: viii
isotherm
creating: 44
deleting: 49
levels, changing: 46
tool: 18
italic: 1

J
jpg: 13

L
legal disclaimer: viii
license information: 2
line
creating: 42
deleting: 48
moving: 47

line *(continued)*
  tool: 18
local administrator rights: 63, 64

M
monospace: 1
moving
  area: 47
  images: 23, 25
  line: 47
  spot meter: 47

O
object parameters, changing: 51

P
palette
  changing: 38
  tool: 18
parameters, changing: 51
pasting images: 28
patents: viii
patents pending: viii
postal address: viii
printing images: 31
problems: 59
product warranty: viii
program
  installing: 9, 10
  updating: 12

Q
quality assurance: viii
quality management system: viii
quick start guide: 3

R
reflected apparent temperature, changing: 51
relative humidity, changing: 51
releases, service: 1
renaming images: 30
report, creating: 56
request for enhancement: 1
requirements
  hardware
    camera: 7
    PC: 7
  software
    PC: 7
restarting camera: 61
RFE: 1
rotate
  images: 37
  tool: 19

S
save
  tool: 18
saving images: 27
screen elements: 15, 16, 17
screensaver problems: 65
select
  tool: 18
semibold: 1
sending images: 32, 33
service releases: 1
software requirements
  PC: 7
software updates: 1
spot meter
  creating: 41
  deleting: 48
  moving: 47
  tool: 18
support, technical: 1
supported file formats: 13
system requirements
  camera: 7
  hardware: 7
  software: 7

T
technical support: 1
temperature levels, changing: 50
text comments, editing: 55
ThermaCAM™ Reporter
  compatibility with: 8
thermographic inspection workflow: 4
thermographic report, creating: 56
thumbnail size, changing: 35
toolbar buttons
  area: 18
  auto-adjust: 19
  delete: 18
  export to Microsoft® Excel: 19
  flying spot meter: 18
  image: 18
  image navigation: 19
  isotherm: 18
  line: 18
  palette: 18
  rotate: 19
  save: 18
  select: 18

toolbar buttons *(continued)*
  spot meter: 18
  voice comment: 19
  zoom: 19
tools
  area: 18
  auto-adjust: 19
  delete: 18
  export to Microsoft® Excel: 19
  flying spot meter: 18
  image navigation: 19
  isotherm: 18
  line: 18
  palette: 18
  rotate: 19
  save: 18
  select: 18
  spot meter: 18
  voice comment: 19
  zoom: 19
trademarks: viii
training: 1
troubleshooting: 59
typical workflow: 4
typographical conventions
  italic: 1
  `monospace`: 1
  semibold: 1
  UPPERCASE: 1

U

updates
  program: 12
  software: 1
UPPERCASE: 1
USB drivers
  installing: 11
user-to-user forums: 1
using
  flying spot meter tool: 40

V

view settings, changing: 35
voice comment
  tool: 19

W

warranty: viii
window elements: 15, 16, 17
workflow, typical: 4

Z

zoom
  factor, changing: 36
  tool: 19

A note on the technical production of this manual

This manual was produced using XML – eXtensible Markup Language. For more information about XML, visit the following site:

- http://www.w3.org/XML/

Readers interested in the history & theory of markup languages may also want to visit the following sites:

- http://www.gla.ac.uk/staff/strategy/information/socarcpj/
- http://www.renater.fr/Video/2002ATHENS/P/DC/History/plan.htm

A note on the typeface used in this manual

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- http://www.ms-studio.com/articles.html
- http://www.helveticafilm.com/

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